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(54) Title: SHAMROCK SURFACTANTS AND THEIR METHODS OF USE

(57) Abstract: Disclosed are surfactants that contain two ionic or polar nonionic head groups, each connected to a central ionic head group by a hydrocarbon linking moiety. The central head group is a dithiophosphate, dithiocarbamate, or quaternary ammonium group. These surfactants have potential applications in chemical decontamination of mustard (simulants), storage and release devices/chemical switches and the remediation of heavy-metal ion-contaminated water.



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